REMARKS

The following remarks respond to the Office Action mailed December 2, 2004. Claims 1-15 are currently pending in the application. Claims 1 and 5 are presented in independent form.

Claim Rejections - 35 U.S.C. § 112

Claims 1, 4-5, and 10 were rejected as being indefinite. Specifically, claims 1 and 5 recite a limitation of having internal components electrically connected to the contacts on the front surface. The Examiner asserts that the contacts are shown as inside the semiconductor body.

Referring to Figure 1, the internal components 20 are connected to the contacts 18 which have a bottom surface on the outside edge of the semiconductor body. The bottom surface is flush with the outside edge of the semiconductor body. Thus, the contacts are "on" the front surface of the semiconductor body as such term is defined at paragraph 0024 of the specification.

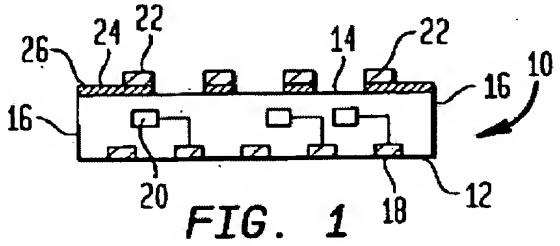

FIG. 1

The Examiner also asserts that the limitation of "said body has edges bounding said front and rear surfaces and said traces include bonding points disposed in the vicinity of said edges" which is present in claims 4 and 10 is confusing in light of Figure 2.

Although the bonding points are shown merely as areas on the traces in Fig. 2, Applicant submits that this is

perfectly clear in light of Fig. 4. As depicted below Fig. 4, the bonding points 26 are simply points on the traces 24 upon which wire bonds 36 are later connected.

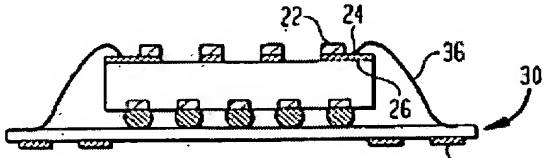

FIG. 4

Claim Rejections - 35 U.S.C. § 102

The Examiner rejected claims 1-5 under § 102(b) as unpatentable over U.S. Patent No. 6,150,724 to Wenzel. Wenzel is directed to a semiconductor structure comprising a mother chip with a set of bump contacts and a daughter chip with conductive bumps that are placed in contact with each other to route electrical signals between the chips with a minimum of interconnect lengths.

With respect to independent claim 1, Wenzel fails to disclose or suggest a semiconductor chip with pads and traces on the rear surface that are electrically isolated from the internal components of the chip. Rather, as shown in Fig. 7 of Wenzel, the chips in Wenzel are interconnected using conductive bumps that "route electrical signals, such as logic signals, or active analog signals, between he external world coupled to bumps 112 on the mother chip 102." (Col. 9, lines 5-7.) Thus, Wenzel fails to disclose all of the elements of claim 1.

With respect to independent claim 5, Wenzel fails to disclose or suggest traces extending from pads on the rear surface of the chip. Wenzel merely discloses two interlocking chips with conductive bumps or bump contacts on the surface of the chip. There is no disclosure in Wenzel of any traces

connected to these bumps or contacts. The bump contact regions 310 pointed out by the Examiner are used only to conduct signals between the bumps and the chip. These contact regions are not the equivalent of traces. Thus, Wenzel fails to disclose all of the elements of claim 5.

Applicant respectfully submits that dependent claims 2-4 are patentable because they depend on claim 1, which is asserted as patentable over the prior art.

Claim Rejections - 35 U.S.C. § 103

The Examiner rejected claims 6-13 and 15 under § 103(a) as being unpatentable over Wenzel in view of U. S. Patent No. 6,313,522 to Akram et al.

Although Applicant respectfully submits that these dependent claims are patentable over the prior art in light of the above remarks concerning independent claims 1 and 5, Applicant notes that the prior art also fails to disclose or suggest many of the features listed in these dependent claims.

Dependent claim 8 recites stacking two chips on a substrate such that the contacts on the second chip are connected to the substrate through the pads and traces of the first chip. This feature is not disclosed or suggested anywhere in the prior art relied upon for rejection.

Dependent claim 9 uses wire bonds 36 extending from the substrate 30 to the traces 24 on the rear surface of the first chip 10. Wenzel teaches away from the chip recited in claim 9. In discussing Fig. 1, which shows a prior art configuration of wire bonds connecting two stacked chips, Wenzel states that "noise and bandwidth problems occur along the longer routing paths that are required for some electrical signals." (Col. 2, line 15-17.) Wenzel goes on to state that "a need

exists in the industry for a new multi-chip device which can reduce the interconnect lengths of metal and reduce the adverse effects of routing parasitics." (Col. 4, lines 39-41.)

Conclusion

As it is believed that all of the rejections set forth in the Official Action have been fully met, favorable reconsideration and allowance are respectfully requested.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that the Examiner telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

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Respectfully submitted,

By _____

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